

Rocky Mountain Research Station Science You Can Use *(in 5 minutes)*

OCTOBER 2020



A New Community-Based Tool to Assess Wildfire Risk

Every region of the United States contains fire-adapted landscapes that require fire to maintain a healthy, functioning ecosystem. Yet built within these landscapes are thousands of communities that are at risk from wildfire due to their location within the wildland-urban interface. To provide a comprehensive community-level view of this wildfire risk, in 2018, the Consolidated Appropriations Act included a directive for the Forest Service: create a nationwide map of the wildfire risk to communities and deliver the product in 2 years. Enter the [Wildfire Risk to Communities Interactive Map](#).

Modeling and Census Data

Creating this map on such a short timeframe would require the expertise of multiple researchers. “The team we put together was handpicked carefully because they are really good at what they do,” explains Jim Menakis, the national fire ecologist with the U.S. Forest Service Washington Office – Fire and Aviation Management. Menakis, along with Frank Fay, who is an applied fire ecologist also with the Washington Office, were project leads.

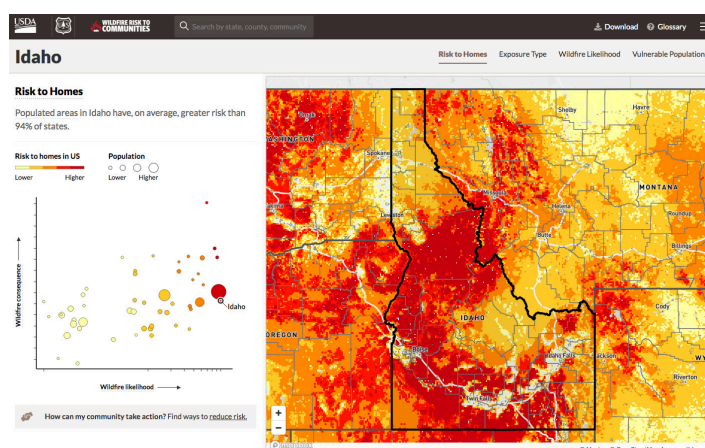
Greg Dillon, a spatial fire analyst with the Rocky Mountain Research Station, served as the technical lead and was responsible for pulling together the datasets to power the map. Many of these datasets had been developed by the RMRS, “which gave the effort a big head start,” he says. Nationwide modeling data output from the large fire simulation system, FSim (wildfire risk simulation software), provided critical information on the possible occurrence and intensities of wildfire. These wildfire modeling data were then overlaid on U.S. Census data, which were used to define community locations.

Community-Level Application

In spring 2020, the Forest Service debuted [Wildfire Risk to Communities](#). Users can search by state, county, or community and zoom in to see the risk to homes for their area, along with maps of wildfire likelihood, and where homes would be directly or indirectly exposed to wildfire. Also included are community statistics about vulnerable populations from the census—a contribution from Headwaters Economic, one of the project partners.

Dillon says the team is proud of the section on how communities can reduce risk, which hadn’t been in the original scope of work.

“We expanded the project to not only identify where communities are at risk but actions communities can take to mitigate that risk, from the homeowner all the



The Wildfire Risk to Communities website provides a nationwide view of wildfire risk potential, allowing users to see how individual states, counties, or communities compare to others across the country.



way up to landscape planning,” Menakis says, adding, “Our goal was to implement part of the National Cohesive Wildland Fire Management Strategy and provide something to make the strategy be more implementable.”

“The hope is that *Wildfire Risk to Communities* can guide land use planning around thinking about these fire mitigation issues,” says Dillon. “If it can get people to consider wildfire when planning new subdivisions or choosing what building materials to use, that would be a success.”

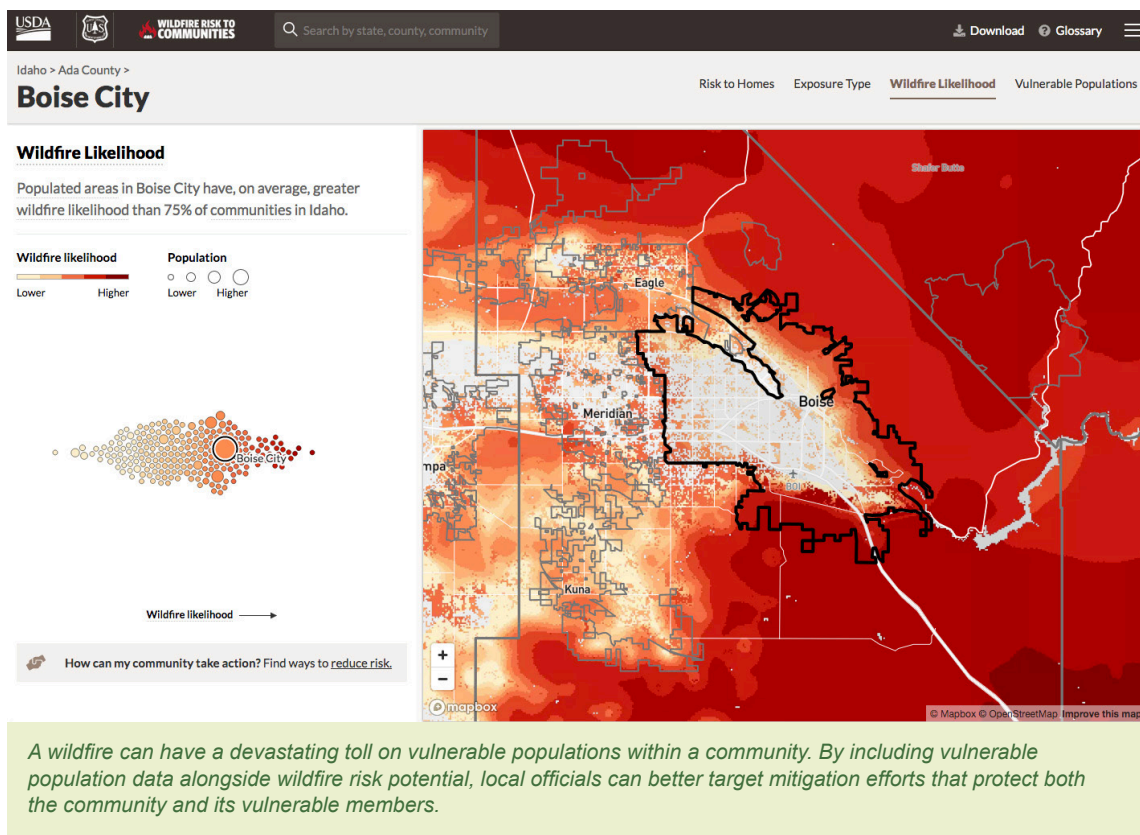
Since the website’s launch, numerous users have complimented the project team. “The feedback we’re getting across the board has been outstanding” Menakis says. “From district rangers to county planners, to universities who are using this as a communications tool. The goal is not to make decisions but to start a conversation with all the partners.”

Management Implications

- The *Wildfire Risk to Communities* website is a one-stop resource where citizens and community leaders can assess the wildfire risk of their area and find resources to reduce the risk.
- By providing nationwide coverage of wildfire risk, it is possible to compare how the wildfire risk varies across a state, region, or county and prioritize actions to mitigate the risk.
- Crucially for communities within the wildland-urban interface, the wildfire risk accounts for how houses may be susceptible to embers or indirect ignition sources.

LEAD SCIENTIST

Greg Dillon is a spatial fire analyst with the USDA Forest Service, Rocky Mountain Research Station Fire Modeling Institute (at the Missoula Fire Science Laboratory). His research focuses on combining fire science and geospatial technology to address management questions from the national level down to local districts. Connect with Greg at <https://www.fs.usda.gov/rmrs/people/gdillon>.



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